# CALLBACK

**From NASA's Aviation Safety Reporting System**

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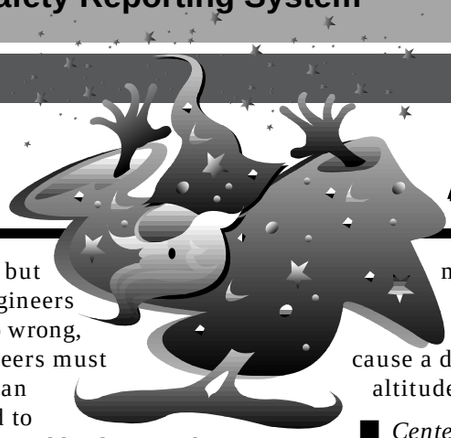
# Murphy's Law—Aviators' Version



The source of Murphy's Law is obscure, but it is thought to have originated with engineers and scientists: "When something can go wrong, it will." One of those scientists or engineers must also have invented the altitude alerter, an example of electronic wizardry designed to increase flight safety and decrease pilot workload. But when alerters don't work, due either to mechanical or human error, they can be worse than useless—they can become a hazard. More from this Part 135 First Officer reporting to ASRS:

■ *While we were climbing, Center advised us to "climb to 15,000 feet, traffic at 16,000 feet..." Passing through 12,000 feet, the #1 prop governor started to lose control, [but] was found to be within tolerances. I decided to try to adjust the condition levers while hand-flying the aircraft. I became preoccupied with the situation, and was waiting to hear the altitude alerter, which of course malfunctioned. So naturally, we passed through our altitude by approximately 800 feet. The alerter never signaled in with the pre- or post-400 foot alarm mode as it is designed to do. Additionally, the Captain had gotten preoccupied with some company paperwork, so he had missed his "1,000 feet to go" call.*

*I feel the problem arose from my reliance on the altitude alerter, and the Captain's attention being taken away to perform company business.*

In another incident, a Captain also counted on mechanical means to maintain his awareness of his assigned altitude. He discovered that even the normal required cockpit tasks can cause a distraction, and a resultant failure to set the altitude alerter.

■ *Center issued instructions for us to hold...at 7,000 feet. As we entered the hold, I saw the altimeter pass through 6,800 feet. I said "7,000" and arrested the descent, stopping at 6,700 feet, and began to climb back to 7,000 feet.*

*Three ATC clearances in rapid succession, coupled with a confusing hold clearance, caused a rapid rise in workload. The F/O [First Officer] had not changed the altitude in the FMC [Flight Management Computer]. Both pilots have a high level of altitude awareness, and always set the altitude alert and confirm it upon receipt of a clearance. But not this time. I had turned away to write down the clearance. The F/O went right to the CDU [Control Display Unit] to program the hold. The normal sequence of events was broken. Thus, no one set the altitude window.*

*The lesson here is one of prioritization. Set the altitude window before anything else is accomplished.*

In portions of their reports not quoted here, both reporters acknowledged that ATC came to the rescue. In the first case, there was a clearance to a lower altitude; in the second, a request for confirmation of altitude. The controllers' transmissions were enough to refocus the attention of the flight crews.

# More Murphy

A General Aviation pilot offers another example of "things just not going as planned":

■ *The fuel tanks were topped off, which would mean a 4.22-hour endurance according to the aircraft flight manual. The flight lasted 3.5 hours, at which time the engine quit on final approach. An emergency was declared and the aircraft was landed safely on a dirt road one mile from the runway.*

*The cause of the problem was two-fold: not taking into account the effect of a hot day on fuel expansion and evaporation, especially on auto gas which was used in the airplane; and incorrect leaning of the engine...*

*The right fuel gauge was reading empty, but the left gauge showed nearly a quarter of a tank, further leading me to believe I would have plenty of fuel to finish the flight.*

The pilot's basic pre-flight preparation was in the ball park, but hot weather changed the game plan and the pilot forgot to alter his plan accordingly. Over-reliance on fuel gauge indications added to the problem.

# A Real "Saab Story"

■ *We were on the 45 degree intercept for 17L when Approach asked us if we had the Saab in sight in front of us. The First Officer [F/O] answered in the affirmative. Spacing looked good to me—probably because I was looking at the wrong Saab... It was TCAS that alerted me to the close proximity of the traffic [we] were actually to be following. The target...was probably about two miles at my two o'clock position. We turned left off the intercept heading and continued to the southeast and were instructed to contact Approach Control for another approach.*

*Arrival into the sun, multiple similar aircraft, F/O calling out traffic in sight prior to Captain's positive verification are all contributory.*

| ASRS Recently Issued Alerts On... |
|---|
| FM radio interference with a Tennessee ILS frequency |
| Multiple controller reports of inaccurate ASOS information |
| Practice military intercept of a jetliner in Brazilian airspace |
| Uncommanded deployment in cruise of a B757 speed brake |
| Distribution of AIM revisions after effective dates of changes |


*A Monthly Safety Bulletin from*

**The Office of the NASA Aviation Safety Reporting System,**
**P.O. Box 189,**
**Moffett Field, CA**
**94035-0189**


| June 1995 Report Intake | |
|---|---|
| Air Carrier Pilots | 1863 |
| General Aviation Pilots | 785 |
| Controllers | 107 |
| Cabin/Mechanics/Military/Other | 33 |
| **TOTAL** | **2788** |

# Turbojet "Upset" Reports Needed for NTSB Study

Are you a pilot of a multi-engine turbojet air transport category aircraft who has recently experienced an uncommanded roll, yaw, or other loss of aircraft control? If you're willing to share your experience with the Aviation Safety Reporting System (ASRS), you can help support an effort by the National Transportation Safety Board (NTSB) to review first-hand accounts of these types of events. Your input will assist the NTSB in developing preventive recommendations.

ASRS "Structured Callbacks." At the request of the NTSB's Human Performance Group, the ASRS will be conducting telephone interviews (called "structured callbacks") throughout the summer of 1995 with air transport pilots who report to the ASRS incidents of uncommanded upsets in multi-engine turbojet aircraft. Participation is *voluntary,* and *all* personally identifying information (names, company affiliations, etc.) will be removed before the ASRS data are given to the NTSB. Only aircraft make/model information will be retained.

How the Structured Callback Works.

- An ASRS analyst will contact you at the phone number given on your reporting form ID strip, or by letter to the address on the ID strip if you give no phone number. If you are willing to take part in the interview, the analyst will arrange to call you back at a convenient time.
- The interview itself will take approximately 30 minutes. If there are questions you prefer not to answer for any reason, the interviewer will go on to the next question.
- You will receive your report ID strip back–with no record of your identity retained by ASRS–as soon as the interview is complete.

Making Aviation Safer. Many pilots who have participated in past ASRS structured callbacks have found this experience rewarding. In addition to supplying important research information that might not be included in a written ASRS report, the interview process is a unique way for pilots to help improve the system.

If you're a pilot who has experienced an uncommanded turbojet upset, ASRS is waiting to hear your story. Reporting forms are available on request from NASA's Aviation Safety Reporting System, P.O. Box 189, Moffett Field, CA, 94035-0189.

## *The Adventures of Fido*
### *("Next Time I'm Going to Walk")*

In an upset of an entirely different kind, this Captain and his crew were looking forward to a stellar flight in their beautiful new A-300. Alas, it was not to be...

First, the APU Air was placarded "INOP." Then, the Main Cabin door would not lock. During the ensuing delay, a passenger expressed concern about her dog enduring the heat in the cargo hold.

■ *Held a brief discussion with the crew regarding "Dead Dog on Hot Day" syndrome...no APU/Ground Air = Dead Fido. Message hopefully understood.*

The first leg of the flight was uneventful, the report continues. On the second leg, approaching the scheduled refueling stop at ABC, Company Ops told the crew not to land there:

*...because President and Mrs. Clinton were in town and utilizing all ground power units for the remainder of the day.*

*We notified Dispatch of our predicament. We were told to "Standby." ATC issued our descent clearance into ABC. We told them to "Standby." During the process of "Standing By," we attempted using ARINC. You guessed it..."Standby!" We suggested a divert to XYZ...and the response was..."Standby."*

Finally, the flight crew *informed* Dispatch that they *were* landing at XYZ for fuel. The XYZ ground crew were expecting a B-737-300, not an A-300, but were

resourceful and responsive. The Captain tells the rest of his story:

*We had not forgotten the "Hot Ramp + No Ground Air = Dead Dog" syndrome. We were told that Fido was traveling in a carrier that would stow beneath the seat. The Second Officer volunteered to escort Fido to his anxious owner in First Class.*

*Fido and carrier were much larger than expected. We allowed Fido a moment's freedom, some First Class Designer Water (properly chilled), and an appreciative hug from the crew (thank goodness he had survived). Fido expressed his opinion of the operation so far, and left a large deposit outside the cockpit door. Way to go, Fido...*

*Fueling complete. The passengers applauded our impending departure from this hellish hot nightmare. There was an additional...delay. Fido's final comment, as he lifted his right rear leg, "Next time I'm going to walk."*